THE
PHILOSOPHY OF PHYSIC,
OR,
PHLOGISTIC SYSTEM.

[Price Two SHILLINGS AND SIXPENCE.]

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THE
PHILOSOPHY of PHYSIC,
OR,
PHLOGISTIC SYSTEM;

In which Phlogiſton ſupplied in an *Aerial Form* by the Ingeſta, and regulated in its Agencies and Evolutions by atmoſpherical and tonic Reactions, is conſidered as conſtituting, actuating, and ſupporting the vital Power or ſtimulant Suſceptibility; and hence a conciſe Plan of Medical Practice is propoſed *on fixed Principles*, which reſult from a general and particular View of Cauſes and Effects.

By T. DEWELL,

SURGEON.

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1784

TO THE

Rev. *Joſeph Prieſtley*, L.L.D. F.R.S.

REV. SIR,

CONVINCED that the greateſt advantages will accrue to the ſcience of phyſic from purſuits in the line of experimental philoſophy, I embrace this public opportunity to offer you my ſmall tribute of thanks, for taking ſo very eminent a part in that branch of ſcience; a part which has already contributed much to our aſſiſtance, and promiſes infinitely more.

I am, Rev. Sir,

Your moſt obedient

and humble Servant,

MALMSBURY,
JAN. 1, 1784.

T. DEWELL.

INTRODUCTION.

WHEN Dr. Shebbeare, in the year 1755, applied the aids of electriciſm to the improvement of medical ſcience, that ſubject was ſo little known, and ſo very imperfectly underſtood, that his doctrine gained but few advocates; the profeſſors ſtill continuing to follow the German tenets in ſucceſſion, and to apply indiſcriminately to them all the cooling plan of Sydenham; until the fatality of the cynanche maligna convinced them of their error in one inſtance, and of the poſſible fallibility of the received opinions in general: but had Dr. Shebbeare, or ſome later writer of the ſame philoſophical turn, been in poſſeſſion of the aſſiſtances ſince derived from experimental inquiries, and of the ſeveral opinions advanced reſpecting the cauſe and ſtability of animal heat, probably the ſcience of phyſic would not now have wanted fixed and general principles for its ſupport. I therefore venture to bring forward his original intentions,

ſupported

ſupported by the later and more happy opinions of Dr. Leſlie, and to apply them as in the following ſections; under a full perſuaſion that there is an appointed and relative agent in nature which conſtitutes, actuates, and ſupports the leſſer as well as the greater frame; and that the wanted fixed principles are to be obtained by inveſtigating the true nature and operations of this univerſal cauſe, and its effects. But before I proceed, it may be proper to advance ſome opinions and poſtulata on ſeveral points which experiments cannot reach,* as preparatory to the ſubſequent reflections; and it may be likewiſe proper to obſerve, that the endeavours of our moſt ingenious inquirers to eſtabliſh facts by *aſcending from experiments to concluſions* have been fruſtrated, probably, by too ſtrict an obſervance of that Newtonian rule; which, together with the dread of having their opinions fall into the broad maſs of human miſtakes, has hitherto prevented thoſe deciſive concluſions which the aſſiſtances of theory might have ſupplied; for experiments alone, unaſſiſted by theory, will never eſtabliſh ſcience; of which truth there is ſufficient proof in the little good hitherto effected by much induſtry and labour, when confined to the experimental line alone: and particularly in phyſic, by thus admitting no fact which experiment will not ſtrictly ſanction, and by the experiments of one day contradicting thoſe of another, it is abſolutely impoſſible to bring forward any particular experimental authorities, *verbatim*, to form a proper foundation for medical ſuperſtructure; but, notwithſtanding this impoſſibility, it will appear to all, converſant with ſuch writings, that the following deductions and poſtulata are fairly made from the aggregate; for the reſult of the whole, conſidered collectively, clearly confirms that moſt ſimple and ſatisfactory truth in nature, "*That one univerſal agent was appointed, to which all others were made relative and ſubſervient; and that we can truly judge of the nature of this agent, only by the effects which it produces.*" *

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* Vide deduction the 7th.

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* Vide Chambers's Cyclopædia, edit. nov. animal heat.
——— Baron Bielfeld's Elem. of Univ. Erud. vol. 1, p. 222.
——— Monthly Review, May 1779.

Deductions from the aggregate of experiments.

I. Phlogiſton, inflammable air, elementary fire,* and the electric fluid, are the ſame principle, and inquieſcent matter.

II. Fixed air is phlogiſton and pure air combined.

III. Phlogiſton, diſſolves water, apparently, into air.

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* The opinions which maintain that phlogiſton and elementary fire are different and oppoſite principles; and that there is in animal heat, in circulation and reſpiration, *a double elective proceſs*, cannot be ſupported; (*a*) neither can the opinion be ſupported, that the particles of the electric fluid in their moſt diffuſed and divided ſtate always continue to repel each other."

(*a*) Why ſuppoſe them to be oppoſite principles, when oppoſite degrees of the ſame principle will ſolve the difficulty? (*b*)

(*b*) Vide Cyclopædia, edit. nov. under the head *Animal Heat*; conſult likewiſe Sir Torbern Bergman's Chemiſtry for the ſubſtance which is for a moment dephlogiſticated, and it will be found to be a non-entity: and if Dr. Leſlie had lived and proſecuted the ſame line of inveſtigation, the numberleſs crude ideas reſpecting phlogiſton would probably long ago have been loſt, in the moſt complete diſcovery of the truth.

IV. From fermentation, efferveſcence, and boiling water, from fire and flame, and by friction, electric ſparks are collected.

V. Phlogiſton exiſts in all bodies to its 5th degree of power, and is fixed and impacted in them by attraction, and diſcharged from them by repulſion; the attraction and repulſion always depending on the ſurrounding media.

VI. If fixed air be given to wort, and to flour and water, and the compound be kept in a certain degree of heat, the neceſſary fermentation for beer and bread will be produced aseffectually as with yeaſt.

VII. Since neither phlogiſton nor the aerial acid can be exhibited in a ſeparate or concrete form, uncombined with another ſubſtance,* it is concluded that they are *one principle* in nature which can no otherwiſe be comprehended, but by the effects which it produces.

VIII.

Peaſe contain	$\frac{1}{3}$	of fixed air.
Newcaſtle coal	$\frac{1}{3}$	
Sugar - - -	$\frac{1}{10}$	
Human calculus	$\frac{1}{2}$	
Heart of oak -	$\frac{1}{4}$	

* Although our experimental men cautiouſly avoid preſuming to decide the grand queſtion, reſpecting the reality of fire; yet there is not one of them all whoſe experiments and concluſions do not tacitly controvert the Newtonian opinion.

POSTULATA

I. That phlogiſton is univerſally diffuſed throughout all ſpace, and throughout all bodies, animate, and inanimate.

II. That it is in perpetual motion throughout all ſpace,* paſſing either in a ſeries of diverging lines from, or collecting in a ſeries of converging lines to, centrical points, its limits of expanſion depending upon its centrifugal power; in which it is ſuppoſed that the moſt regular ſimilarity of motion prevails,† excepting within the attraction of any planet.

III. That the centrical point is always phlogiſton, electric fluid, ſpecific fire, the matter of light, or ſenſible heat; and that its diffuſed and expanded ſtate is eſſentially the ſame principle, but may be called either air, wind, darkneſs, or cold; or in other words, inferior degree of heat.*

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* The ſpace here intended is confined to the ſphere of every ſun reſpectively, each ſun being the centrical focus of a certain ſphere.

† This relates to ſpace univerſally, and the effects will be the ſame, whether the centrical point or body moves in an orbit or not.

IV. That its converging direction ſavours the vincula of all bodies, by the attractions of its own converging lines; and its diverging direction tends either to ſupport or deſtroy them, by the centrifugal repulſions of its diverging lines.†

V. That it neceſſarily is a perpetual agent, either diverging by a centrifugal power, or converging by a centripetal power; and that there is a certain point fixed by nature, at which the firſt ceaſes and the latter commences; the 3d, 4th, and 5th degrees of power always depending upon the ſurrounding media.‡

VI. That its degrees of agency in bodies depend on the quantity naturally poſſeſſed by, or given to different bodies; and on external influences.

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[*] In all theſe there is no difference but in degrees, from the directions of its lines; which is proved by the known fact that moſt ſolutions generate or adduce cold to the ſurrounding medium; and, likewiſe, by the electric fluid fixing water in the ſeveral appearances of hail, ſnow, and hoar froſt.

[†] This relates to vegetating and living bodies, which are ſupported by appointed degrees of its agency, and deſtroyed either by agency in exceſs or in defect.

[‡] Vide ſection the 10th.

VII. That its degrees of ſenſible heat, wind, or air,* of elaſticity, rareſaction or condenſation, depend wholly on the diviſion and on the direction of its lines, and on the column, volume, and rapidity of its motion.†

VIII. That the decompoſition of received ſubſtances and fluids and their ſolution and mixtion with animal fluids generate heat more or leſs, according as the received ſubſtances and fluids poſſeſs and diſcharge more or leſs phlogiſton than was previouſly preſent in thoſe fluids; and according to atmoſpherical and tonic reaction.

IX. That as phlogiſton diſſolves water into air, certain proportions of each, appointed by nature, unite into the various denſities of air;‡

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* For theſe effects all ariſe from one and the ſame inſeparable element; why therefore ſhould we again take up the idea of two principles, when the operations of one are adequate to the ſolution of every appearance which there is of two, either in art or nature?

† The appearance of the waſte of air in reſpiration and other proceſſes ariſes from its agency being impeded by combination.

‡ So long as phlogiſton and water exiſt in or ſurround any ſubſtance air will neceſſarily be produced, both within the ſubſtance, and without it, forming more or leſs of a peculiar atmoſphere to all things; which idea explains Dr. Ingenhouſz's miſtake of *dephlogiſticated* air paſſing off from plants, &c.; for it is only *relatively* dephlogiſticated, and may be either ſuperior or inferior to the ſurrounding media.

but an addition or mixtion of either, beyond the proportions appointed by nature, looſens the vinculum and occaſions their ſeparation.

X. That this union of phlogiſton and water into air takes place in fermentation, and in *animal fluids*;* yet this air is not to be conſidered as a new principle, but as a different modification of phlogiſton, in which its agency is highly efficient and diffuſible, as in the 3d degree; and hence by acquired miſcibility and aſſimilation, mixtures and waters full of fixed air become ſo immediately and univerſally miſcible and ſtimulant.†

OBSERVATIONS.

However extraneous and unphiloſophical ſome of the foregoing poſtulata may appear to men attached to particular habits of thinking; yet let them grant the identity of phlogiſton and elemen-

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[*] Increaſing the bulk of them to that degree, in which atmoſpherical and tonic reactions take place; and particularly increaſing their bulk in exerciſe, in a ſurrounding medium of greater heat, in bed, and in the ſun's advance to the meridian, &c.

[†] The more phlogiſton abounds in combination, the more the acid called aerial acid abounds, of which fixed air contains infinitely more than common air: and hence aroſe the miſtake of fixed air being only an acid, ſui generis.

elementary fire, let them grant the reality, the univerſality, and perpetual agency of phlogiſton; let them grant the 1ſt, 8th, and 10th poſtulata, and the ſubſequent medical obſervations will want no other ſupport: but previous to the application of this idea of the perpetual agency of phlogiſton to the aids of medicine, let us purſue it more at large in the line of natural philoſophy.

In which we may obſerve that in every ſpace which appears to us to be a void ſpace, there is a perpetual agency of phlogiſton;* and that if that apparently void ſpace be incloſed as in a diving bell, or in a well-corked bottle of air, ſuch a ſpace will become immediately ſtill, and agency cannot recommence in it but by expoſing it to a ſuperior, or an inferior medium: and yet it appears that the power of agency will not be loſt, from the well known circumſtance that a growing vegetable will live a conſiderable time in ſuch confined ſpace.

We may by induction prove that the ſolar ray, the electric ſpark, the matter of light, and of flame and lightning, are different modifications of phlogiſton in its 5th and 6th degrees of agency; in which degrees it is always viſible: and thence we may infer that phlogiſton is the univerſal medium, and that the moſt regular and uniform proceſs of centripetal and centrifugal agency is always going on beyond the earth's atmoſphere, in converging and diverging lines; either rectilinear, rotular, vortical, or by vibrations or otherwiſe. We may conclude that the ſun is its central point or focus of centrifugal power; and that the extreme line of a certain ſphere, determinable by its centrifugal power, is that moſt divided, expanded, and diffuſed ſtate, in which, by the laws of nature, its centripetal power commences; and that this centripetal power neceſſarily ſuperſedes and prevents that equality of diffuſion, and that ſtillneſs, fixity, ſolidity, or extinction of power, which would otherwiſe produce another chaos. We may likewiſe conclude, that phlogiſtic agency governs the ſituation and motions of the earth; and combining with its elementary principles that it forms the earth's atmoſphere in all its denſities, and modifies, connects, ſupports, and actuates the conſtituent principles of the earth itſelf, and of every thing which lives and grows in it; for which purpoſes we may preſume that it was called forth from the chaotic maſs, and endowed with ſufficient powers at the creation.

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* It is to be noticed that the quantity in the whole never varies, and that the extreme expanded quantity and the concentrated quantity always bear an equal proportion.

This agency * is perpetually going on in all ſpace and in all ſubſtances and fluids, ſlowly in ſubſtances, and more rapidly in fluids; originally forming every tube and every cell in ſolids, and ſupporting that motion in fluids which preſerves them from putrefaction, and permits the coheſion of the different parts of matter, as in the formation of the germ or embrio.

In nutrition the ſenſible agency commences in its 3d degree in the ſtomach, in the decompoſition of the various foods and beverages which we make uſe of; it is thence continued in the chyle, in the blood, in the lymph, and in the nerves; acquiring force as it advances. It eſtabliſhes and ſupports both animal and vegetable life, and excites all the neceſſary functions and properties in all bodies and ſeeds properly conſtituted for life and vegetation; perpetually collecting from the ingeſta, and circulating to all the exhaling pores; and from them giving as well as

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* It is ſo ſubtle and diffuſed as not to interrupt the rays from objects falling properly in viſion; but on the contrary it conſtitutes the proper medium for the perfection of viſion, and for the ſituation, ſupport and comfort of this globe and all its parts.

abſorbing by the inhaling pores, reciprocal advantages to and from the atmoſphere.*

The proceſs of extrication of phlogiſton within, or conveyance of it to any animal or vegetable, may be either ſo ſudden, or ſo ſlow, that in either extreme it may be fatal; inſtances of which we ſee every day in animal, as well as in vegetable life; in the former, which is more particularly my ſubject, we remark it in the plague, in exceſſive heat, in the fates of the Marſeilles' porters, and in violent exerciſe; we likewiſe notice it in the effects of the Grotto del cani, in noxious vapours and fumes, in odours from large collections of flowers, and in large doſes of opium and of laurel water; all which give off phlogiſton in exceſs and act by an electric ſhock,† in too ſuddenly and violently raiſing the relative degree of expanſion, neceſſary to life. On the other hand, ſlow or deficient extrication within, or conveyance of it to any animal or vegetable, will equally have fatal effects, ſooner or later; and the ſooner, when ſuddenly taking place after the other exceſs, and conſequently too ſuddenly permitting the relative degree of expanſion to collapſe; but that I may not wade too far into the regions of theory, I ſubmit the following practical ſections, as I propoſed, to the judgment of impartial readers.

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* And thus nature, in this inſtance as well as in many others, anſwers her purpoſe by a double intention.

† Their ſuppoſed ſedative power is denied, as likewiſe is all ſedative agency conſidered as a poſitive power; and camphor, valerian, muſk, and opium, are all conſidered as ſtimulants, and as ſedatives only when they act too powerfully on the vital power; admitting that this conſcious principle is variouſly affected by particular fætors and fragrances, which may in their firſt effect be relatively ſedative, but are in their nature ſtimulant, and productive of phlogiſtic agency both in their mixtion and reſolution in animal fluids:

fluids: and hence irritability becomes an admiſſible idea, though it is of very little uſe in practice, and falls more properly under the head of inferior idiopathic effect, which may be produced either by exceſs or defect of agency; and the idea of mobility can only be received as a peculiarity of conſtitution.

SECTION I.

THE two leading branches of the ſcience of phyſic, the one deſcriptive of the human œconomy in health, and the other of every particular and occaſional deviation, are explained by different teachers and writers under the heads of Phyſiology and Pathology, and particularly well by Gaubius and Haller: but notwithſtanding every thing which has been taught and written, it is univerſally acknowledged that ſome fixed and general principles are ſtill wanted; and that this unhappy deficiency has been, to the diſgrace of the profeſſion, the ſource of every ſpecies of deception and deſtructive quackery. In this ſituation the difference between the man of ſcience and the empiric is unfortunately too little; the empiric boldly tells us that his medicine will cure without knowing more than that it ſometimes does; but the man of real ſcience ſhould be qualified to aſſure us, that both his experience *and the fixed principles of his profeſſion* ſanction the propriety of his medicine, and the general plan of cure which he recommends.

SECTION II.

It is therefore much to be deſired, as well for the benefit of ſociety as for the honour of the profeſſion, that a juſt and rational theory of diſeaſe was eſtabliſhed, *on fixed and general principles*; for upon ſuch only profeſſors of medicine can act decidedly and juſtly, and found a hope of retrieving its credit; and it is more than probable that ſuch a deſireable acquiſition may be obtained, by applying to phyſiology the progreſſive agencies of phlogiſton; which, it is preſumed, conſtitute, actuate and ſupport the vital power:* for though experimental philoſophers do not agree in the manner of its agency, yet they all prove that this principle is very active in nature, that it is abſolutely neceſſary to the exiſtence and ſupport of every thing which is, that it is the vinculum of all bodies, that it forms an immenſe proportion of the aggregate, and in its operations produces all the varieties of things; and that it is never ſtill or at abſolute reſt in any animate, vegetating, or growing body;* or unalterably fixed in any ſubſtance whatſoever.

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* Gaubius in inveſtigating the vital power ſuppoſes it to be an electrical power, and though Dr. Monro obſerves that *ſufficient* proof is not produced of its being ſo, yet that obſervation implies that he does not know what other power it is.

Pray what proof is expected?

"Who will aſk for a handful of phlogiſton?"

Vide Dr. Watſon's Chemical Eſſays,
—— and deduction the 7th.

SECTION III.

From this principle it is preſumed that medicine may derive thoſe wanted aſſiſtances which have hitherto eluded the endeavours of the ingenious of all ages and countries, who have all been loſt in errors and confuſion; which unhappy proof of the weakneſs of human judgment hath been moſt notoriouſly exemplified in the fates of the three celebrated theories of Stahl, Boerhaave, and Hoffman; each of which hath had its day of celebrity and decline, and that very obviouſly for want of the aſſiſtances which experimental philoſophy has now produced.

SECTION IV.

Stahl was of opinion that the ſolids and the fluids and the functions, in general, were actu-

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* Attraction and repulſion and centripetal and centrifugal agency are ſynonymous, and are the properties of one principle only, which does not in its uncombined ſtate admit of parallel agency; which propoſition is perfectly conſiſtent with the Newtonian truths.

ated, ſupported in health, and reſtored from diſeaſe, by a ſuperintending and adminiſtering power inherent in the human frame, which he ſuppoſed to be *the mind;* he therefore adviſed that nature ſhould be very much truſted to, and always followed as our pilot.*

Boerhaave conſidered the mind and the functions in general as the reſult of a natural ſtate of the ſolids and fluids, actuated by ſome unknown power; and directed our moſt particular attention to the chemical eucraſy, or to the quantity, quality, and texture of the fluids.† And Hoffman perfectly agreed with his immediate predeceſſor in his phyſiology; but equally uncertain as to the nature of the directing agent, he, contrary to the preceding pathology, laid the chief ſtreſs on the tone of the ſolids, or on nervous energy‡.

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* A proper regulation of the non-naturals is preſuppoſed.

† Boerhaave admitted the reality of fire, but his opinions reſpecting its mode of agency are as unintelligible, as Sir Iſaac Newton's theory of the cauſe is uncertain.

Vide Dr. Watſon's Chimical Eſſays, vol. 1. p. 163.

‡ Hoffman conſidered the mechanical modification of parts as the parent of humoral eucraſy, and as the principal

SECTION V.

The latter opinion has moſt clearly biaſſed our preſent moſt celebrated writers and teachers in the moſt eſſential points of their doctrines, but as tone, or nervous energy, or chemical mixtion do not convey any clear or adequate ideas, upon which to eſtabliſh any one fixed or leading principle, without a perfect knowledge of the true nature and modus operandi of the directing and ſupporting agent; how much more are we indebted to the ingenious inquirers into natural philoſophy, than to the labours of the faculty;* which latter have all unfortunately been directed more to diſcoveries from the microſcope, than from chemical inquiries: how much more deſerving of the attention of the faculty would it

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agent in all the functions, and that the proper order of thoſe parts was the rule of health; but this idea is clearly too limited to be ſatisfactory; for no opinions can be truly ſatisfactory which do not develope the original cauſe of animal heat and *motion*.

* Though it is confeſſed that ſome gentlemen of the faculty have taken the line of experimental philoſophy, yet more real benefit has been derived from the labours of men who are not of the faculty; and it was not till thoſe benefits had been previouſly derived from others, that the faculty paid ſufficient attention to that branch of ſcience.

have been to have taken the line of experimental philoſophy as the moſt promiſing path to have diſcovered the true nature of this unknown agent; how much more promiſing to have ſought for it in every element, to have ſought for it in the air, in the genial warmth diffuſed through nature; to have ſought for it in the water and in the earth, in all their variable modifications; but more particularly to have examined the peculiar diet and beverages of the various climates, which inſtinct had led mankind to appropriate to their uſe, and experience had ſanctioned the propriety of! for theſe we had found to have been eſſentially and neceſſarily different in different climates, and we might thence have drawn concluſions from analogy.

SECTION VI.

But inſtead of ſuch promiſing inquiries our preſent moſt celebrated teachers, whenever they at all depart from clinical empiriciſm, attach themſelves chiefly to the German tenets; but their predilection for the former, from the abſurd concluſion *that ultimate cauſes are not diſcoverable,** is at preſent ſo predominant and has ſo perverted their judgment, that whenever they attempt to give a proximate cauſe they are as ambiguous and as undeciſive as the oracles of old,* and all their attempts at improvement of ſcience are hence highly abſurd and replete with error. To their particular attachment to Hoffman we owe ſpaſm, atony, action and reaction, and mobility; to Stahl we are indebted for the vires medicatrices, which have led too many to truſt to nature; and to Boerhaave for plethora, obſtruction, viſcidity and lentor, conſidered as proximate cauſes.

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* It certainly may be maintained, that, ſo far as they may be productive of good, all ſuch inveſtigations are laudable and required.

SECTION VII.

The refinements of ſpaſm ſupporting reaction,† ſeptic and antiſeptic nonſenſe without defined as of the vinculum,* and the dangerous doctrines which maintain the locality of humours and eruptions, and aſſert the ſafety of repelling them, are the unhappy offſpring of the moderns;† the latter of which opinions is moſt clearly founded in a total inattention to the inteſtine motions of the fluids, and the firſt in mere ſophiſtry begging a previous queſtion; and the whole, with their operoſe noſology, forms a moſt abſurd jumble of inconſiſtent practice, miſtaking ſymptoms for diſeaſes, and diſeaſes for ſymptoms.‡

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* A late highly meritorious and deſcriptive work on the ſtructure and functions of the nervous ſyſtem is equally inconcluſive, as to the nature of the directing and appointed agent.

† Spaſms from affections of the conſcious principle, as in paſſion, terror and ſhame; and thoſe which ariſe from conſent of parts, as hyſteria, are temporary affections; but conſidered as the ſupporter of fever ſpaſm is merely ideal, for the imperviency ariſes not from any ſpaſmodic natural action, but from exceſs of agency; and the collapſe ariſes from its defect.

SECTION VIII.

How much more reaſonable is it to ſuppoſe, how much more probable and reconcileable to ſelf evident truths to believe, how much within the ſcope of experiment to aſcertain, that the human frame is wholly paſſive! for all the functions in their reſpective operations and affections tend to eſtabliſh this hypotheſis; and on this broad concluſion it is probable that a juſt and rational ſyſtem of practice may be founded; for conſtitutions, miaſmata, ſpecific contagions, the injuries of time and errors apart, we moſt certainly derive all the other cauſes of diſeaſe from the atmoſphere, from the different and perpetual attractions and repulſions going on in nature, from the diſranged agency of the conſtituent principles of our diet and beverages, and from the particular effects of ſeaſons, and of heat and cold without us; and I venture to advance that tone and atony,* action and reaction, the vires medicatrices, ſeptic and antiſeptic power, and inteſtine and periſtaltic motions, are all regulated by the agencies of one general and univerſal cauſe; which cauſe was coeval with eternity, and was the appointed inſtrument of the Almighty to eſtabliſh and ſupport all his works.

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* When Huxham aſſerted the ſeptic quality of the fixed alkaline ſalt, and Sir John Pringle declared it to be antiſeptic, which was to be believed? or what ideas did they profeſs?

† Obſerve that tenets *only* are combated; and that every due preference is intended to the northern ſoil.

‡ Nauſeating doſes of antimony do ſervice, when they occaſionally clear the firſt paſſages, and likewiſe in ſlight deviations from the proper degree of agency; by moderately exciting one action, pro tempore, to ſuſpend another in the one inſtance, or by a gentle ſtimulus throughout the ſyſtem in the other; but nauſea alone debilitates *too little* to render eſſential ſervice in very ſuperior, and *too much* to be ever admitted in very inferior degrees of agency.

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* Tonics and relaxants are only relative powers, derived from the quantity of phlogiſton which they poſſeſs; for tonic power, conſidered literally, is merely momentary, and cannot ſatisfactorily account for the durable effects of the bark, myrrh, and ſteel.

SECTION IX.

This univerſal cauſe is *phlogiſton;* a principle which can no otherwiſe become the object of ſenſe, but by its effects in its evolutions within the human frame, when particularly applied to it;* and throughout all nature when more extenſively conſidered; its agencies without us correſponding with and regulating its agencies within us.

SECTION X.

Scale of the Powers of Phlogiſton.

Aerial acid—its 1ſt degree of power.
Æther—its 2d degree of power.
Combinations
Fixible air—its 3d degree of power.
Inflammable air—its 4th degree of power.
Electric fluid—its 5th degree of power.
Specific fire—its 6th degree of power.

N. B. The firſt is centripetal, the ſixth centrifugal, and both are one principle. The ſecond and fiſth are relatives to the firſt and ſixth, and the third and fourth are combinations.

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* This idea of every particle of matter or fluid affording in its decompoſition perpetual ſparks of phlogiſton, which are every inſtant of time increaſing in power through their progreſſive changes, is conſidered as adequate to the eſtabliſhment and ſupport of the vital principle; aided by the influences of the ſurrounding medium.

SECTION XI.

This univerſal principle exiſts in divided lines in all fluids and ſubſtances, and is emitted from them from centrical points, and its concentration to thoſe points is produced by its centripetal power;* its extrication is likewiſe produced by the application of fire, by friction, by the ſolar ray, and by the diviſion of parts; in reſpiration, in diet and beverages, and by various other ways it is received into the body in divided lines, and is afterwards emitted from it in eccentric lines; from the lungs, from the pores of the ſkin, and from all the emunctories, perpetually within the body undergoing progreſſive changes of power, till it acquires that relative degree which is adequate to the actuation and ſupport of the human frame.†

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* Vide poſtulatum the 5th; vide likewiſe Dr. Milner's Experiments and Obſervations on Electricity; in which it is proved, that when two bodies having the ſame electricity recede from each other, it is to be attributed to the ſurrounding medium *only*, and not to the neceſſary repulſive agency of two bodies equally electrified, as has been erroneouſly conceived.

† The degree of phlogiſtic agency neceſſary to expand every veſſel, tube and fibre, muſt neceſſarily be elaſtic, and act centrifugally; and that ſufficiently to fill ſuch veſſels, tubes,

SECTION XII.

Phlogiſtic agency within the human frame in its progreſſive changes of accumulating power, and the regulations of the different degrees for the due performance of all its functions, require the aſſiſtance of art, both for the preſervation of health, and for the reſtoration from diſeaſe; and conſtitute the moſt eſſential points for medical conſideration, in all diſeaſes and at all ages; admitting in their utmoſt latitude the effects of other ſtimulant quality and quantity, and the ſubſerviency of the vital power, thus conſtituted, to other powers; and admitting likewiſe in their utmoſt latitude the ſympathetic affections of the body and mind, particularities of conſtitution, the injuries of time and errors, the locality of certain diſeaſes, and all the ſtationary complaints of the different ſtages of life; and in theſe conſiderations it will happily be found, that this agency is ſo much within the reach of art, as to anſwer every reaſonable expectation from medical aſſiſtance.

tubes, and fibres to that degree, in which tonic reaction takes place; thus action and reaction ariſe, and are continued; and thus periſtaltic motions will be perpetual in the living ſolid, from the progreſſive accumulated powers of phlogiſton acting by a vis a tergo; and that probably in its aerial form of the third degree, increaſing in power as it goes.

SECTION XIII.

Purſuing the idea, this principle ſo neceſſary to exiſtence muſt be received into the human frame, and be blended with ſuch quantities of water and of earth,* as ſhall be neceſſary to ſupply the waſte which is hourly made; for theſe latter principles are always paſſing on, as well as the former; but phlogiſton muſt preſerve a moſt incredible proportion in exceſs to the other two, to create the neceſſary agency; and muſt be ſo fixed and impacted, that the progreſs of its extrication and change of power muſt preſerve a proper ratio of action on the living fibre, and of inteſtine motion of the fluids, for their due elaboration and mixtion; and likewiſe for the due performance of every function; it muſt likewiſe be in the relative degree for the actuation and ſupport of the vital power; and this opinion of phlogiſtic agency conſtituting, actuating, and ſupporting the vital power,* I am perſuaded is of the firſt conſideration in phyſiology and pathology; and that it may be purſued throughout every diſeaſe and every indication of cure and power of medicine, with the utmoſt practical advantages, and without either perplexity and confuſion; the pulſe, heat, ſecretion, and local affections being ſure data on which to ground the method of cure.

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* The chemical ſubdiviſions are foreign to the purpoſe under preſent conſideration, for it is ſufficient for us to know that phlogiſton is contained in every particle of received ſubſtance or fluid, and that it flies off in the ultimate decompoſition of that particle in a centripetal direction; but it muſt be obſerved, that though its firſt direction is ſuppoſed to be centripetal in the human ſtomach, yet in a ſurrounding medium of greater cold its firſt direction would be centrifugal; conſequently it is to be conſidered, excepting in its firſt and laſt degrees, as a relative power; and this ſame idea may be ſatisfactorily maintained, to explain reſpiration, and all the phenomena of heat and cold; and of ſolution and mixtion.

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* This agency of phlogiſton in its progreſſive changes of power excites and ſupports that perpetual motion, which, conſidered as a ſecond cauſe, creates animation, the ſentient principle, or ſuſceptibility of effluvia and impreſſions; a ſenſe differently modified in different parts, depending upon the different expanſions or convolutions of the extended parts of the cerebrum, which conſtitutes *every part*, each differing from the other; hence ariſes the conſent of parts. And though the microſcope does not diſcover all parts to be nervous, yet it is a very rational conjecture that they are ſo; for the microſcope which ſhewed the red particle of the blood globular to one man, and flat to another, might equally deceive in tracing the nerves; an inſtance which ſhews the weakneſs of our reliance upon ſuch aſſiſtances, as have frequently led anatomiſts aſtray, and produced as much diſcordance as experimental philoſophy unaſſiſted by theory.

SECTION XIV.

The vital power thus conſtituted and ſupported is to be conſidered as a principle, ſui generis, of a paſſive kind; ſubſervient not only to the agencies of phlogiſton, but likewiſe to ſtimulant quality and quantity of various ſorts. It is to be conſidered as derived from the fluids, and poſſeſſed by the ſolids; both which equally demand our attention; and, taken in a medical ſenſe, are both equally the creatures of the univerſal cauſe, and of the ingeſta and external influences;* but principally of the univerſal cauſe, which never was from the beginning, nor ever will be ſtill, or at abſolute reſt; but by the perpetual proceſſes going on in nature, muſt neceſſarily be, ſooner or later, called forth into ſenſible action; even from ores, from ſtones, from all the works both of art and nature; and from the inmoſt receſſes of the earth;* and how much more will the human fabric, that wonderful aſſemblage of complex and delicate parts, be affected with every variation in the general proceſs, and with even the ſmalleſt deviation from the equable or relative degree; however greatly ſuch occaſional deviation may be deſigned for ſome particular, or the general good!

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* The nerves are in the firſt lines formed in embryo, from the umbilicus; and they originally prepare the plaſtic matter for particular organization, ending with the cuticle, and excretory ducts; conſequently nervous energy, agreeably to Hoffman's doctrine, is a conſideration of the utmoſt moment in phyſic, from infancy to age.

SECTION XV.

Agreeably to this doctrine the vis medicatrix, volition, and reflection, will likewiſe appear to be effects only dependent on the univerſal cauſe, and inſeparable from animation, and the vital power; that attribute or natural quantity derived immediately from the Almighty, through the progreſſive agencies of phlogiſton; by which it is communicated, ſupported, or deſtroyed; and this attribute or natural quality is the ſame eſſentially in every part of the body, but exiſts in no part, *for any time*,* diſtinct or ſeparated from communication with the brain; that widely extended and ſubdivided organ, in every part of which phlogiſton is highly efficient and exalted, and by means of which it is, in this efficient ſtate, whether we are ſleeping or waking, every moment of our exiſtence in union with, and by its agency expanding every tube and every cell in every fibre, exciting motion and reaction, and ſupporting that ſtimulant ſuſceptibility, which is poſſeſſed by all living ſolids; and to the formation of which certain degrees of ſoftneſs and elaſticity are neceſſary, for had it been otherwiſe, the nail and bone would have been equally ſuſceptible of pain with the ſofteſt fungus.

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* This is perfectly agreeable to the opinions advanced by Buffon and Toulmin, reſpecting the perpetual agencies in the earth; which are proved, as far as we can penetrate, to exiſt therein to the 48th degree of heat of Fahrenheit's thermometer.

SECTION XVI.

Hence the vis medicatrix may be inferred to be an effect only of ſome power applied, ſimilar to that by which water cleanſes itſelf from impurities,

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[*] The decollated animal and inſulated heart prove, that it exiſts in the ſolids for a certain time, and that this power is poſſeſſed by the ſolids; which, together with the vaſcular ſyſtem, are extenſions and continuations of the cerebrum, and its appendages; the medullary matter of the cerebrum forming the ſolids, and paſſing off in every ſecretion, and, from every pore, probably with phlogiſton in its fifth degree of power.

rities, exciting motion, and conſequently in the human frame exciting a proportionate degree of reaction from the tonic power;* which, without ſome interruption of the equable proceſs, either by leſion of the ſimple fibre, by preſſure; by ſome pungent or corroſive quality, fætor or fragrance; or by a groſſneſs of parts affecting the different ſenſoria;† or from congeſtions, accumulations, or ſtimuli of ſome ſort or other, would not otherwiſe, or ſpontaneouſly ariſe; nor can it at our will; it ſhould therefore always be conſidered as an effect, which is often found to be excited ſufficiently to remove the cauſe; but it may and often is excited more or leſs, and therefore calls for the aſſiſtance of art, and cannot be truſted to alone.

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* May not inſpiration, ſucceeding expiration, be ſatisfactorily explained by the probability, that a phlogiſtic impulſe excites that action which gives riſe to ſuction, in the firſt motion of the lungs from a collapſed ſtate?

† This vital power is moved into action by ſtimuli of various ſorts, and correſponds with the friendly, or is excited into the neceſſary degree of reaction to reject the unfriendly; and an increaſe of action in one part of it for a moment ſuſpends the actions in all other parts; hence ariſe rigors in obſtructions and accumulations, and from nauſeating medicines on the ſtomach; but continued increaſe of action in one part will raiſe the actions generally, as in high inflammation.

SECTION XVII.

Further to illuſtrate this opinion, it may be conſidered that every atom of living as well as of other matter, for it is difficult to draw the line, coheres by the agency of phlogiſton ;[*] and that all living matter is in perpetual motion, from the perpetual proceſs within itſelf; and that every particle of that matter is capable of having its proper degree of action ſo increaſed, as

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[*] Coheſion cannot be without phlogiſton, and the heat and action which are neceſſary to form and ſupport the vinculum of the fluids in a ſtate of health, are below the degrees which would deſtroy the coheſion of the moſt ſimple fibre; and thus ariſe coheſion and original formation, from extended nervous matter, *umbilically*, *(a)* from the placenta.

(a) In the interior ſubſtance of the funis umbilicalis within its coats a ſubſtance is found very ſimilar to the ſubſtance of the nerves; and why may not nature by this channel perform her purpoſe by a double nervous intention, as well as by the double intention of circulation by the foramen ovale and canalis arterioſus? why may not hence ariſe the difference between fœtal and animal ſenſation? for both fœtal phlogiſton and plaſtic matter are derived by the placenta; which, contrary to the received opinions, may be the original maſs from which the ovum ariſes by affinities and elective attractions; and ſpecies, hereditary conſtitutions, diſeaſes, paſſions, colours, and likeneſſes, all concur to diſprove the ovum pre-exiſtent to the coit.

immediately to acquire to itſelf by every degree of increaſe, a proportionable increaſed degree of phlogiſtic agency, which may then be denominated vis medicatrix, or that adminiſtering power which acts by conjuration; which proportionable increaſed degree, either of the third or fifth denomination, is frequently and effectually excited for its own relief, and is ſometimes acquired in that exceſs, as to deſtroy; on the other hand, this proceſs may for a time only be ſo interrupted, as *eventually* to acquire the neceſſary degree of power from the ſurcharge of accumulated fire, obſtructed in its uſual direction; or the proceſs may be ſo long interrupted and ſuſpended, or be ſo languid and inert, for want of a ſufficient vis a tergo, or ſucceſſion of fire, that the vital power may be irrecoverably loſt in the part obſtructed primarily.

SECTION XVIII.

And thus the centrifugal powers of phlogiſton excite every action and open every pore, and occaſionally acquire that degree of power which ſo frequently produces the moſt favourable terminations of inflammations and obſtructions, when nature relieves herſelf without the aſſiſtance of art; but the powers of nature are frequently ſo ſluggiſh and inert, as to require the aſſiſtances of art; which happily can be employed by the general ſtimulant powers of added phlogiſton, or by the more local ſtimulus of medicine;* for the vital power is *ſecondarily* ſuſceptible of the latter as well as of the former;† and the degrees and kinds of power which may be wanted will be clearly ſeen by a collective view of the elementary principles, general rules, and medical powers. On the other hand, the exciting powers are often ſo conſiderable as to defeat every power which art can employ either to counteract them, or to obviate their effects.

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[*] Or the more permanent ſtimulus of regimen; for both quantity and quality of medicine and regimen are equally neceſſary objects of medical attention; and the diviſion of medical and dietetical powers into thoſe which are general and elementary, and thoſe which are proper and ſtimulant, will be found to be advantageous in practice.

[†] The terms *vital power*, *ſtimulant ſuſceptibility*, and *conſcious feeling*, by no means argue two different kinds of ſenſation, which idea has been lately thrown out by a very high medical authority; but they are all moſt aſſuredly one and the ſame ſenſation or principle; and phlogiſtic agency, conſidered as a natural cauſe, is adequate to its production.

SECTION XIX.

Extrication of phlogiſton from the ingeſta, and its progreſſive changes of power, may either be from natural or occaſional cauſes, above the ſtate of general and proper ſecretion, or below it; if it exceeds, its firſt effect will be increaſed ſenſible heat and action, which the touch and the pulſe will immediately ſhew; and this increaſe will be extended very generally throughout the ſyſtem, and to every organ and ſimple fibre; and ultimately will be fixed in one point, conſtituting inflammation and organical leſion of various degrees.

SECTION XX.

Extrication and agency in exceſs we find moſt immediately and generally produce head ach, with a ſuſpenſion of the functions in general, from the too great action in the cerebrum primarily, and thence extended to every part; but it does not always follow that the cerebrum is firſt affected, for we find the ſeat of pain and inflammation* frequently commences in the lungs, in the pleura, the diaphragm, and intercoſtals;* in the lymphatics, the exhalants, the ſtomach, and all the viſcera; of courſe ſuſpending the ſecretions either partially or generally, and exciting diſorders of various ſorts.

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* Vide Dr. Kirkland's Medical Surgery on the ſubject of inflammation, who very ſatisfactorily explains it to be the effect of internal animal fire, external irritation, or organical leſion."

SECTION XXI.

And here it is to be noticed that from ſome natural or occaſional cauſe, either in the ſolids or in the fluids, ſuch inflammation may ariſe either locally or generally, even from the moſt equable ſupply and agency of phlogiſton; and when it becomes fixed to a point, extenſion and diſtraction of the fibres affected enſue; and the effects will thence be communicated very extenſively, even from the ſmalleſt whitlow; and continue until relieved by ſuppuration and diſ-

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* Local inflammation ariſes both in exceſs, and in defect of general agency; and the true diſcrimination of the remote cauſe is of much importance; the proximate cauſe is an exceſs of action in a determinate ſpace excited by diſranged phlogiſton, vitiated quality, or exceſs of quantity, which determinate ſpace is bounded by ſpaſm; but ſpaſm in this caſe is only the action of a ſecondary or paſſive power, excited by a local and active power in a degree ſuperior to atmoſpherical or tonic reaction; and not the effort of a vis medicatrix.

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charge; but we frequently have it in our power, and always ought to attempt, to conquer the inflammation at its commencement: if neither reſolution nor ſuppuration take place, the effects are very generally aggravated and extended, the pulſe and ſecretions * become more and more affected, the diameters of the extreme veſſels and exhalants will contract and become impervious, the abſorbent faculty will be loſt, univerſal obſtruction will of courſe enſue both externally and internally, the fluids will recoil upon the brain and other viſcera, and death of courſe enſue from exceſs of action.

SECTION XXII.

On the other hand, agency in defect is of courſe below the ſtate of general and proper ſecretion, and produces immediate debility † with a little quick pulſe, head-ach, languor, and a temporary ſuſpenſion of the ſecretions; the diameters

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* The different appearances of the tongue ſhew the ſtate of the ſecretions in general.

† There is an appointed degree of agency, above or below which the correſpondence or equable transfuſion of the phlogiſton from the fluids to the ſolids is interrupted; by regulating the agency the fever ceaſes; for fevers of different types are the conſequences of exceſs and defect of agency.

meters of the extreme veſſels will then enlarge from the continuance of the too weak excitement, and from the ſeparation and effuſion of the thinner parts of the fluids through them; the ſame accumulations and obſtructions, as before deſcribed, will enſue in the viſcera, and the ſame fatal cataſtrophe often follow, though from a different remote cauſe *.

SECTION XXIII.

A very ſmall change of the degree of the power of agency will change the one form of diſeaſe into the other, and the greateſt attention is neceſſary in acute caſes to watch and guard the natural or artificial change; the natural change or criſis takes place at that point of the effects of the proximate cauſe in the one form of diſeaſe, in which the too great agency begins to leſſen; and at which, in the other form, more

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[*] The equable and regular correſpondence and transfuſion ceaſe; phlogiſton no longer exiſts in the human frame, but in divided lines; (a) and the neceſſary degree of relative agency cannot be recalled.

(a) Impacted in earthy matter, or ſo diffuſed in the fluids, as never afterwards to riſe above its third degree of power; and that but locally in putrefaction at the final diſſolution of parts.

efficient agency begins to ariſe*; the artificial change may be the effect of well adapted diet and medicine; and both theſe changes call for great exertions of judgment, and for the moſt exact attention, as life or death depends upon the management of the preſent hour.

SECTION XXIV.

Sudden expoſures of the body to cold, or to cold and moiſture, particularly when agency prevails in exceſs; ſitting at ſuch times in cold ſtreams of air, drinking cold liquors, ſtanding long on cold damp ground, or keeping on any part of our clothes which may be wet or damp: on the other hand, drinking too much wine or ſpirits, exceſs in eating, violent exerciſe of body or mind, and paſſions of every ſort; any one or either of theſe circumſtances or errors is ſufficient to produce fatal miſchief, by checking or raiſing the proceſs either partially or generally; and thereby producing the enemy in different ſhapes in different climates.

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* Exceſs of heat and agency in the fluids may prevail with too little action of the ſolids, as in the putrid, hectic, and proper fever; and this exceſs of heat and agency in the fluids may be either the cauſe or conſequence of too little action in the ſolids; ſo that heat *alone* is not a ſure criterion.

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SECTION XXV.

Theſe truths we particularly notice as the frequent remote cauſes of many diſorders, particularly of the inflammatory ſore throat and fever; of the phthiſis pulmonalis, catarrh, pleuriſy, and rheumatiſm; and likewiſe of putrid, bilious, dyſenteric, and nervous diſorders; the ſpecification or type of the diſorder depending much upon ſeaſons and climates: for ſeaſons and climates are found to determine the genus of the diſeaſe, by creating the pre-diſpoſition, and conſequently giving it a ſpecific modification.

SECTION XXVI.

The agency of phlogiſton is moſt evidently different in the different ſtates of the fluids; it is clearly more rapid, but not more abundant in quantity in the thinner ſtate of the fluids than in that which is more firm and viſcid; and the ſolids are, neceſſarily, in that ſtate of the fluids and of agency more extenuated and irritable; the viſcid and firm ſtates of the fluids accompany the ſtrong, elaſtic, and more ſolid fibre; and the weak texture accompanies the tender, irritable, and extenuated fibre; and both theſe deſcribed caſes are the conſequence of the continuance or

excelſ,

exceſs,* or defect of agency; either from diſeaſes, age, or conſtitution; from climates, ſeaſons, or from the quantity and quality of the ingeſta; the ſolids and fluids mutually depending upon each other, and equally demanding our attention.

SECTION XXVII.

We are likewiſe to attend to the effects of artificial electric fire,† and of exerciſe; to the ſenſible differences in the effects of the various foods and beverages on the proper degree of inteſtine motions; and to the effects which are obſervable in the violent agitations of the fluids, previous to eryſipelas, to ſcorbutic and moſt eruptions; previous to meaſles, nettle raſh, ſmall pox, ſcarlet fever, bilious diſcharges, and to moſt epidemics; for in the ſymptomatic and aſſimilating fever, previous to or conſtituting ſuch appearances, the vinculum or central connecting medium of the fluids is greatly weakened, and for a time nearly deſtroyed;* as in the plague, and in violent fermentation; but recovers itſelf again ſimply by the attractions in the fluids themſelves, in a properly regulated heat and action; which heat and action † are much within our power at the acceſſion of their too high degree.

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* For ſtrong ſolids and firm blood approach too nearly to a ſtate of diſeaſe, to be denominated proper health; and call for the dietetical part of medicine.

† The medicinal effects of artificial electricity are ſtrongly corroborant of the truth of the phlogiſtic ſyſtem; for though the ſtolen fire hath long loſt its virtue, yet a certain ſyſtematic aſſemblage of parts, in impeded or in ſuſpended animation, may be aſſiſted and reſtored by the powers of electricity; moſt probably, from the increaſe of power derived from the ready union of ſimilar parts with ſimilar parts, as is explained in poſtulatum the 10th; but if the vinculum be broken, if the inteſtine agency be loſt, the powers of electricity are vain.

SECTION XXVIII.

We are likewiſe to obſerve that diſeaſes ariſe at certain periods of life as natural cauſes; from the progreſs of the ſimple fibre from its firſt coheſion to its maturity, calloſity or oſſification;

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* The feculencies obſervable in urine, and probably going off in the other ſecretions, are ſuch parts as the fluids do not aſſimilate to their own nature upon the recovery of their proper vinculum; and ſuch as they throw off in their depurations.

† The neceſſary regulation of the heat and action in the proceſs of fermentation, and in the ſymptomatic fever in the aſſimilation of the fluids to the nature of ſpecific contagion, prove the ſimilarity of the proceſſes in their inteſtine motion.

and that theſe ariſe ſooner or later, depending upon habits and original conſtitutions, and are either general or local; we are in particular to obſerve the tender irritable ſtate in infancy, perpetually ſubject to inflammation; we are to obſerve the period of epiſtaxis, of hæmoptoe, the times of puberty, and of the phthiſis pulmonalis; we are to notice the fixed ſtate of health and ſtrength very generally enjoyed from twenty-five to thirty-five; when the periods of the changing ſtate of the fibre and of the increaſing volume of the veins commence; and are followed by a long train of complaints, many of them the unavoidable attendants of advancing age; in which gout,* gravel, and earthy matter are depoſited; when the hœmorrhoids, dyſpepſia, aſthma, melena, ſchirrus, apoplexy, gutta ſerena, palſy and dropſy, fill up the catalogue of bodily infirmities; and generally the mind keeps pace with the bodily decay.

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* The gout is moſt aſſuredly nine times in ten of nervous origin, and in fact in ſeveral of theſe diſorders the proximate cauſes are more frequently medullary, and to be ſought for in the cerebrum than is generally ſuppoſed; indeed the general view of the diſorders of the ſeveral ſtages of life, given in this ſection, ſo obviouſly points to their remote and proximate cauſes, as to require no other comment.

SECTION XXIX.

By which it will appear, that the diſeaſes of the different ſtages of life are, in general, from the ſame cauſes producing the ſame effects in the ſame ſtates, but different effects in different ſtates; depending upon the different period of life and ſtate of the fibre; and on the degree of the power applied; the general tendencies in the juvenile age being to the inflammatory kind, from the agencies on a tender fibre; and in the advanced age the general tendencies being to the weaker claſs, from the loſs of faculty: theſe are the general tendencies, but we ſee exceptions every day, from varieties of conſtitutions and habits.

SECTION XXX.

It will likewiſe appear from the natural quality of the ſimple fibre, that continued agencies in exceſs will eventually create diſorders of the weaker claſs; in which caſe infancy or middle age may be afflicted with the ſame diſorders as advanced age; independent of thoſe which may be hereditary and conſtitutional; for there is a certain degree of excitement of the tonic power neceſſary, above or below which, if continued for any time, the ſame ſtate of weakneſs muſt unavoidably enſue; the middle relative degree conſtituting the ſtate of health and vigour: for which definition of the ſame diſorders ariſing equally from continued exceſs or defect of agency, and for a peculiar and advantageous light thrown upon diſorders of the weaker kind in general, we are indebted to Dr. Brown of Edinburgh; who has with ſingular preciſion and propriety treated of them on new and juſt ideas in his Elementa Medicinæ;* and thereby rendered very eſſential advantages to the practical part of medicine; he erred only in not ſatisfactorily defining the modus operandi of the incitantia.

SECTION XXXI.

The previous tendencies being known, I mean the two oppoſite ſtates, the one verging on the borders of vigour in exceſs, the other approaching to a ſtate of weakneſs, in either of which a ſmall deviation will turn the ſcale, the indications of cure may then be truly taken from the ſtate of the primæ viæ, from the pulſe and ſecretions, from the appearances of the tongue, the degree of heat, and of local pain, or affection, *conjointly*;†

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[*] Vide Dr. Jones's Inquiry into the preſent State of Medicine.

but from neither ſeparately; always attending to original conſtitutions, habits, ſeaſons, errors, ſituations, and reigning epidemics.

SECTION XXXII.

In the advancing period of life ſome parts weaken, give way, and admit of congeſtions and præternatural diſcharges; whilſt others become torpid or callous, or oſſify from ſeparations and concretions of earthy matter; and theſe likewiſe admit of congeſtions, and præternatural diſcharges: theſe are all the lot of human nature, muſt come ſooner or later, and our utmoſt care and attention can only ſoften the evil, protract and make the fall the eaſier.

SECTION XXXIII.

At this period of life the fibre looſes its elaſtic faculty, and the viſceral organs neceſſarily partake of the ſame loſs; but whether the fibres weaken* or become callous, which laſt is their progreſſive and natural tendency, the treatment muſt in both conſiſt in very moderate but permanently active powers, both in regimen and medicine, and in quality and quantity; according to the degree of the loſs of faculty ſuſtained; the degrees of which, and indeed of all other deviations from health, will not admit of a clear definition; for which reaſon I avoid all particular definitions and noſological deſcriptions; being of opinion that experience alone can ſupply thoſe requiſite parts of medical knowledge with the proper degree of preciſion.

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* At this period Bath and Buxton waters are found to be highly beneficial by their occaſional uſe; with warm clothing, and the avoiding of exceſſes, paſſions, night air, and adverſe winds.

SECTION XXXIV.

In purſuing all our intentions we muſt advert to the ingeſta, and muſt conſider the vital power as affected by the powers of ſtimulant quality and quantity; as well as by the progreſſive changes in the powers of phlogiſton.* We muſt attend quantity to the quantity of phlogiſton which the ingeſta poſſeſs, with reſpect to the comparative degree which the then ſtate of the body and the ſtage of life demand; and to their likewiſe poſſeſſing ſuch quantities and parts, as the fluids and ſolids require to repair their waſte; and ſuch as they can appropriate and aſſimilate to their own nature from the general mixtion: we are likewiſe to notice that the central connecting medium is a certain appointed degree of agency, from a due proportion of all;* and that all ſecretions and accretions are performed by affinities, and elective attractions from the ingeſta, paſſing through certain mechaniſms; and kept in perpetual motion by the evolutions of phlogiſton, whoſe operations we are conſtantly to keep in view and regulate; for all ſuperior and inferior degrees of agency tend to deſtroy the vinculum.

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* Phlogiſtic agency *increaſes* in power as it circulates, and other ſtimulant quality and quantity leſſen in power; and the former obtains in the moſt highly exalted and efficient ſtate in the cerebrum and its appendages, from its being of courſe in a leſs inveloped and confined ſtate than in any other ſolid, from the particular ſoftneſs of its ſubſtance, which is peculiarly well adapted to receive and communicate impreſſions, and to be the medium of intercourſe between the mind and body; and that probably from its wonderful capability of *inſtantaneous and extenſive phlogiſtic diſtention and compreſſion, either from atmoſpherical, tonic, voluntary or involantary cauſes.*

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* For in our little microcoſm all are but parts of one animated whole, and the ſeveral relative conſiderations of phlogiſton, quality, and quantity; together with the form, ſubſtance, modification, ſurrounding medium, connections, and mechaniſm of the ſeveral parts of the body to be actuated, are all eſſential to effectuate and ſupport the vinculum; and are all, collectively, the eſſence of life, ſenſation, and rationality; and make a part of that living principle which pervades the univerſe; in which men, animals, and vegetables poſſeſs properties and powers limited to their ſeveral neceſſities.

SECTION XXXV.

Hitherto the elemental and general agencies of phlogiſton in its developement, evolution, aerial mixtion, and intumeſcent effects in the fluids,* dependent upon *atmoſpherical and tonic reaction*, have been conſidered as conſtituting, actuating, and ſupporting the vital power, or ſtimulant ſuſceptibility; and it now remains to *notice*† the more local, or proper effects of ſtimulants on the ſame power; as ſupplying both the ſecondary ſupports in aid, and the ſecondary medical powers of counteraction; for thus by confining medical views to two aberrant cauſes and effects *only*, and conſequently to two powers of counteraction, all other diſtinctions will appear, as they will be found in practice to be, totally

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* The expanſions of the fluids depend on the quantity of phlogiſton which they throw off in their decompoſition, and on atmoſpherical and tonic reaction; which are all dependent on various natural and occaſional cauſes; and theſe, and the eſcape of phlogiſton in its electrical degree of power from the pores, from all the ſecretions, and very particularly from the pulmonary artery and exhalents; and the return of it in its more fixible, aerial, and more condenſed form from the pulmonary vein and inhalents, are circumſtances of great weight and conſideration.

† Vide Dr. Whytt's Phyſiological Eſſays, and his Eſſay on the vital and involuntary Motions, for a more explicit account of ſtimulant operation.

tally unneceſſary and productive of no good; for cauſes are only natural or occaſional; effects are only idiopathic, or local; and powers are general or proper; and thus, by contracting both the farrago of medicines, and the number of curative intentions, the great medical objects will be more certainly had in view and effected; and that more immediately for the patients good, and with infinitely more ſatisfaction to the mind of the practitioner who will have fixed principles to guide him.

SECTION XXXVI.

I therefore with much ſubmiſſion propoſe from the preceding curſory reflections, ſome elementary principles and rules always to be had in view; and conclude with an arrangement of general and proper powers; the propriety and juſtneſs of the whole of which will, I flatter myſelf, be found to be ſanctioned by daily experience and obſervation, as well as by an agreement with that ſimplicity and uniformity which nature points out to us as the proper line to be purſued to inveſtigate and regulate cauſe and effect; for although phyſicians have with infinite labour and induſtry inveſtigated the human frame; although they have moſt aſſiduouſly attended to caſes and facts, and have publiſhed ſyſtem upon ſyſtem, and hiſtory upon hiſtory, and ſtrained every mathematical and mechanical power; yet having not till lately developed, by the aſſiſtances of natural and experimental philoſophy, the true cauſe of animal heat, and the modus operandi of the ſeveral elementary and proper powers, they conſequently could not, with any degree of preciſion, trace, aſcertain, and underſtand phyſical cauſes and effects; and have therefore hitherto failed in all their attempts to eſtabliſh fixed and general rules of practice.

ELEMENTARY PRINCIPLES.

I.

PHLOGISTON is the univerſal agent, and inquieſcent medium.

II.

The matter of the electric fluid of phlogiſton, light, heat, and elementary fire, is the ſame inſeparable element,* under different modifications and appearances; dependent on quantity, combination, diffuſion, and action.

III.

Phlogiſton is the appointed agent to conſtitute, actuate, and ſupport all the works of nature.

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* Vide Sir Torbern Bergman's and Dr. Watſon's Chemical Eſſays.

IV.

In every given ſphere the agencies of phlogiſton are always regularly centriſugal, and centripetal; and the line fixed by nature at which the firſt ceaſes, is the point at which the other commences; and conſequently an uniform equality of diffuſion, irregular, or parallel diſtribution, ſolidity, or ſtillneſs of the given quantity of phlogiſton, are inconſiſtent with the laws of its agency, when uncombined; but are all permitted in its fixation, impaction, and combinations with earth and water.

V.

In the formation of the human frame phlogiſton is derived by the ſeminal mixtion, and fixes and impacts the appropriate particles in ſpiral and centripetal lines to conſtitute the placenta, and thence the original nerves of the embryo; and gradually receiving ſupply with plaſtic matter from uterine connection and nutrition it further enlarges, actuates, and ſupports thoſe nerves by an uniform, regular, and neceſſarily *ſuperior* centrifugal agency in its aerial form,* moving in the centripetal lines; and thence ariſe actions and reactions, and periſtaltic and perpetual motions.

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* In this form it is the expanſible animal vapour of the Cavalier Roſa, and the halitus ſanguinis of Haller: and let

VI.

Thus the nerves form the ſolids from the nutritious fluids by the powers of phlogiſton; and the ſame continued proceſs gradually enlarges them to the utmoſt magnitude, which the original nerves and acquired nutrition will admit of.

VII.

The ſolids expanding by ſuperior and centrifugal phlogiſtic agency regularly and progreſſively evolving in its aerial form, and contracting by their elaſtic *tonic quality*, and by *atmoſpherical*

let me aſk, do not the two elementary principles, phlogiſton and water, which exiſt both within and without all ſolids and fluids, form both externally and internally the *ſame* aerial ſubſtance, expanſible matter, or phlogiſtic aura?——Does not coal, when expoſed to the drieſt atmoſphere which we experience, become inert?——Does not lime ſlake?——Do not wood and all other ſubſtances periſh? excepting only ſuch as live, vegetate and grow? and do not even theſe latter periſh likewiſe, as ſoon as the appointed equilibrium of action and reaction between the internal and external aura is deſtroyed, or the neceſſary modification of parts is broken?

"Where then does air exiſt as an ELEMENTARY PRINCIPLE?"

reaction, become poſſeſſed of perpetual motion; and of that principle, ſui generis, called vital power, or ſtimulant ſuſceptibility.

VIII.

And hence, from the hereditary principles, and acquired ſimilar parts derived by nutritious fluids, the agencies of

Phlogiſton,
and of the
Quality and Quantity of the ingeſta,
} regulated by atmoſpherical and tonic reactions,

conſtitute, actuate, and ſupport the ſolids, and endow them with

Elementary power, or *ſenſible heat*,
Tonic power, or *elaſtic quality*,
Vital power, or *ſtimulant ſuſceptibility*;

and excite thoſe

Periſtaltic motions,
Diurnal revolutions,
Actions, and reactions;

in the ſeveral required degrees of

Alternate action, and reſt,
and of
Alternate plenitude, and depletion;

which are neceſſary to regulate and ſupport the

Vital,
Animal,
and
Natural
} Functions;

and theſe are ſeverally, and each of them reſpectively diſtinguiſhed, and known to be

Inferior,
Equal,
or
Superior;

by the

Pulſe,
Heat,
and
Secretions,
and

by the general and local affections; conſidered collectively, and reſpectively to the

Age,
Habit,
and
Conſtitution;

and hence the various natural and occaſional cauſes which diſrange the ſeveral agencies, powers, and functions, are the principal conſiderations for medical attention and inveſtigation; and the counteractions of thoſe cauſes, and the adjuſtment of their effects to the natural ſtandard become the only poſſible, or neceſſary general principles to regulate and govern practice; and theſe very clearly reſult from a collective view of the elementary principles and general rules, and of the general and proper powers.

GENERAL RULES.

I.

TO conſider well the conſtitutional, or acquired diatheſis.

II.

To attend to every effect, ſeparately.

III.

To form the judgment from all the effects, collectively.

IV.

To inveſtigate the proximate cauſe.

V.

To trace the remote cauſe.

VI.

To conſider whether theſe cauſes are natural, or occaſional; and whether their effects are idiopathic, or local.

VII.

To determine whether the effects are ſuperior, equal, or inferior; and to adopt the appropriate curative intention

Idiopathic,
or
Local; *
by the ſuperior, equal, or inferior
General and elemental,
or
Proper and ſtimulant
medical powers, which will counteract the cauſe; or adjuſt the effect.

Et ſalus integra. contraria contrariis toto cœlo oppugnando, e medio puncto illuminabit †.

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* All other diſtinctions are totally unneceſſary; for ſuch are merely ſeveral orders of ſymptoms, which require no deviation from this general precept; admitting that *during the obſervance of it*, particular ſymptoms always require particular attention, but will never be found in contradiction to it.

† Vide Hippoc. Aphor. 22, ſect. 2.
——— Brunon. Elem. Med. 29.

GENERAL AND ELEMENTARY MEDICAL POWERS.

(To be conſidered and applied *relatively*)

Inferior.	*Superior.*
Cold,	Heat,
Abſtinence,	Exceſs,
Reſt of mind and body,	Exerciſe of mind and body,
Subordinate paſſions,	Inordinate paſſions,
Pure air,	Spirits,
Water,	Bark,
Vegetable acids,	Minerals,
Evacuations,	Reſinous gums,
Neutral ſalts,	Volatiles,
Saline waters,	Sulphur,
Aceſcent vegetables,	Animal oils,
Fruits,	Animal food,
Quality and quantity.	Fixed alkaly,
	Electriciſm,
	The thermæ
	Alkaleſcent vegetables,
	Spices,
	Quality and quantity.

EQUAL POWERS.

Inferiors and ſuperiors joined,
Appropriate quality and quantity,
General temperance, and temperature,
Alternate employment and reſt of the body and mind,
Alternate changes of heat and cold.

PROPER AND STIMULANT POWERS.

Simples and compounds which poſſeſs peculiar ſtimulant qualities, powers, and affinities; and are emetic, cathartic, diuretic, ſudorific, tonic, expectorant, &c. &c. &c.; dependent on the peculiar ſenſation, ſecretion, or effect to which they are adapted; and thoſe, which the experience of ages has aſcertained the efficacy of, are ſeverally pointed out in the materia medica, and in the Pharm. Lond. and Edinb.; but the neceſſary knowledge of their relative powers and proper application can only be acquired by a regular education, aſſiſted and improved by practice, and by the moſt attentive obſervations on all general and particular cauſes and effects.*

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* And now let me aſk, is not animal life, *neceſſarily paſſive from combination*, a part of that living principle which pervades the univerſe?——Is it not communicated to matter through the medium and agency of phlogiſtic aura?——And may not this centrifugal elaſtic aura, the *tertium* formed by the union of phlogiſton with the watery part of animal fluids, be likewiſe, by its general intervention, the medium of reciprocal and inſtantaneous intercourſe and power between the mind and body:——nay, may it not be *the immediate inſtrument of every ſenſe and faculty?*——And let me further aſk, did not the Leyden give place to the Pruſſian ſyſtem entirely from our ignorance of the principles of things?——And has not experimental philoſophy now ſatisfactorily unfolded thoſe principles and reconciled the jarring doctrines?

Vide Hobbes on Human Nature.

FINIS.

ERRATA.

Introduction p. 12, l. 6, read and *yet* permits.
p. 5, firſt line of the note, for proper *order*, read proper *action*.
Sect. 8, p. 8, in the note, for *profeſs*, read *poſſeſs*.
Sect. 13, p. 14, l. 10, for *and* confuſion, read *or* confuſion.
Sect. 15, p. 16, l. 5, for *quantity*, read *quality*.
Sect. 17, p. 20, l. 1, for *by* every degree, read *with* every degree.